
Developing self-adaptive, self-organizing systems that fulfill the requirements of different stakeholders is no simple matter. Quality assurance is required at each phase of the entire development process, starting from requirements elicitation, agent design, system architecture design, and finally in the implementation, testing, and deployment of the system. The quality of the artifacts from each development phase affects the rest of the system since all parts are closely related to each other. Furthermore, the shift of adaptation decisions from design-time to run-time—necessitated by the need of the systems to adapt to changing circumstances—makes it difficult, but even more essential, to assure high quality standards in these kinds of systems. Accordingly, the analysis and evaluation of these self-* systems has to take into account the specific operational context to achieve high quality standards. As a consequence, we like to address the following challenges in the workshop on quality assurance for self-adaptive, self-organizing systems:

- Evolutionary developing system
- Interleaving mechanisms
- Uncertainty concerning the system environment
- Open system architecture
- Large number of system participants

The necessity to investigate this field has already been recognised and addressed by different communities, e.g., SASO¹, SEAMS², AAMAS³, and ICST⁴, but there exists so far no platform to bring all these communities together. Therefore, the workshop provides an open stage for discussions about the different aspects of quality assurance for self-adaptive, self-organizing systems. Examples for topics of interest are:

- Modelling and Verification
- Empirical Evaluation
- Test-centred Development
- Case Studies, Industrial Applications, and Experience Reports

The workshop aims to bring together researchers of different communities such as Multi-Agent Systems, Autonomic Computing, Organic Computing, Cyber-Physical Systems, Distributed Systems, Run-time Verification, Software Engineering, Software Testing and Software Quality Assurance to discuss—based on research papers, new ideas, and work in progress reports—the different aspects of quality assurance for self-adaptive, self-organizing systems in order to provide highly reliable, resilient systems. The workshop is an opportunity to promote different views on these key challenges in self-organizing, adaptive systems and to engage in discussions about paradigm shifts in software quality assurance in order to cope with the flexibility of the system design, as well as presenting ongoing research and identify areas where more attention of the community is required.

The papers submitted to the workshop were carefully reviewed by at least three program committee members, and detailed constructive feedback was provided to the authors. The outcome of the review process were four accepted papers out of seven high quality submissions, which almost doubles the submission count with regard to the previous edition of the workshop. The topics covered by the papers submitted are related to testing and safety analysis of self-adaptive, self-organizing systems. All accepted papers are published in the proceedings of the main conference—The Ninth IEEE International Conference on Self-Adaptive and Self-Organizing Systems (SASO 2015)—proceedings by IEEE Computer Society Press.

The program of the workshop is completed by two invited talks given by Jacob Beal (BBN Technologies, USA) and Holger Giese (Hasso-Plattner-Institut Potsdam, GER).

A special thank you goes to all the reviewers and program committee members of QA4SASO 2015, as well as to all the SASO 2015 organizers, in particular, the Workshop Chairs for their continuous coordination and guidance.

We hope that the participants will take advantage of the possibility to share their knowledge in intensive informal discussions during the workshop and to start new productive collaborations. We hope you all assess the workshop as interesting and fruitful for your research interests.